

TRI Lead and Lead Compounds Reporting Years 2000-2002: Data Observations

This document was compiled by the U.S. EPA Toxics Release Inventory (TRI) Program Division in August 2004 to provide some observations of the data reported to EPA on lead and lead compounds for TRI reporting years 2000, 2001 and 2002. Data examined for the development of this document and additional data tables on national reported quantities of lead and lead compounds may obtained online via the EPA TRI web site. Specific tables utilized by EPA to support the observations accompany this document.

Trends in TRI Zero Release Reporters of Lead and Lead Compounds: 2000 – 2002

For TRI reporting years 2000, 2001 and 2002 EPA has identified and compared the number of facilities reporting zero on-site and off-site disposal or other releases of lead and lead compounds with those facilities reporting zero on-site disposal or other releases of lead and lead compounds. The results are presented below, in Table 1.

Table 1 - Zero Release Reporters	RY00	RY01	RY02
<u>Zero on-site and off-site release reporters</u> (may have also reported other waste management quantities for lead and lead compounds)	398 facilities	1,728 facilities	1,617 facilities
<i>% of total # facilities reporting for lead and lead compounds that reporting year</i>	<i>19%</i>	<i>19%</i>	<i>19%</i>
<u>Zero on-site release reporters</u> (may have also reported off-site disposal or other disposal or other releases and waste management quantities of lead and lead compounds)	675 facilities	3,317 facilities	3,151 facilities
<i>% of total # facilities reporting for lead and lead compounds that reporting year</i>	<i>33%</i>	<i>38%</i>	<i>37%</i>

- **As can be seen in Table 1 above, zero on-site release reporters outnumber zero on-site and off-site release reporters for RY00, RY01 and RY02.** Both groups had large increases in the number of facilities reporting lead and lead compounds from RY00 to RY01, due primarily to the lowered reporting threshold for lead and lead compounds starting RY01. Then the following year, RY02, the number of facilities declined slightly in both groups.
- **The zero on-site and off-site release reporters constitute 19% of the total number of facilities reporting for lead and lead compounds in RY00, RY01 and RY02, whereas zero on-site release reporters comprise about one-third of all facilities that reported for lead or lead compounds in 2000.** In the two following reporting years, zero on-site release facilities make up a greater percentage of facilities reporting lead or lead compounds with 38% in RY01 and 37% in RY02. *Source: Attachments 1-6 show these trends and additional data points in greater detail (allfac2000Bzero, allfac2001Bzero, allfac2002Bzero, allfac2000-ON, allfac2001-ON, and allfac2002-ON).* The incidence of zero release reporters for lead and lead compounds for RY02 is only moderately higher when compared to other widely used metals and their compounds such as copper and copper compounds, chromium and chromium compounds, and nickel and nickel compounds, which have much higher reporting thresholds (25,000 lbs/10,000 lbs).
- **EPA receives significant quantities of other waste management information from facilities that report zero disposal or other releases on-site and off-site as well as those that report zero on-site disposal or other releases.** In RY00, EPA received just over 7 million pounds of other waste management data from zero on-site and off-site releasers. In RY01, EPA received over 5.5 million and for RY02, just over 11 million pounds of other waste management quantity data of lead and lead compounds. Recycling quantities reported by zero on-site and off-site release reporters doubled from RY01 to RY02. This was primarily due to off-site recycling by facilities in the primary metals sector (SIC 33) that increased by over 4.5 million pounds from RY01 to RY02. Facilities

in the primary metals sector account for 23% of the total off-site recycling quantity of lead and lead compounds for RY02.

Lead and Lead Compounds Reporting since RY2000: General Trends

- The quantity of lead and lead compounds reported as disposed or released on-site and off-site by TRI reporters has increased 30% since 2000, totaling more than 453 million pounds in RY02 ^{1,2}.
- The number of facilities reporting lead and lead compounds quadrupled from RY00 to RY01 and then declined in RY02.
- Reportable quantities of other waste management data (e.g., amounts recycled) for lead and lead compounds have declined 16% since 2000. This decline is primarily driven by the primary metals sector (SIC 33).
- Quantities reported as recycled (on-site and off-site) from the primary metals sector made up more than 50% of all lead recycling quantities in 2000, 2001 and 2002. When the lead and lead compounds quantities reported by the primary metals sector declined by 90 million from RY00 to RY01 and 14 million from RY01 to RY02 – these trends contributed to the overall decline in TRI lead recycling reporting. This decline in reported other waste management quantities of lead and lead compounds since 2000 may also be due in part, to the development of EPA reporting software that no longer allows facilities to erroneously report a metal (e.g., lead or lead compounds) as burned for energy recovery or treated. *Source: Attachments 7- 9 show these trends and additional data points in greater detail (allfac2000, allfac2001, allfac2002).*

Lead and Lead Compounds Reporting since RY2000: Information from New Facilities

While EPA is unable to determine the exact number of new facilities brought in because of the 2001 TRI Lead Rule (since facilities do not report threshold determinations to EPA's TRI Program), EPA can observe the reporting quantities and trends of those facilities that reported lead in 2001 and 2002, but not in 2000. For the purpose of this analysis, we analyzed these facilities to generate observations of new reporting behavior on lead and lead compounds. Data tables showing these facilities can be found in attachments 10 -13 (newfac2001, newfac2002,

¹ Please note that this does not necessarily mean that total release or disposal of lead has increased by 30% from 2000 to 2002. The lower reporting threshold for lead and lead compounds (implemented in 2001) has required many more facilities to report for lead: these same facilities may have been releasing/disposing of lead prior to 2001, they just never had to report these release/disposal quantities.

² In publicly available TRI data tables at the national level, off-site transfers for disposal or other releases to treatment, storage, disposal (TSD) facilities have been omitted in data tables that would compare or summarize on-site and off-site disposal or other releases. However, the attached national data tables utilized to support the analysis described do not have these amounts omitted. As a result, total quantities of disposal or other releases and other waste management quantities will appear greater in the national data tables attached, among other differences. EPA relied on these data sets to provide a truer characterization of trends in TRI reporting of lead and lead compounds. These national perspectives can be tabulated by the public on TRI Explorer by aggregating amounts from State tables or sector tables, but are included the attachments for the readers' convenience.

newfac2001B, newfac2002B). Table 2 below summarizes the data observations regarding new facilities reporting lead and lead compounds.

Table 2 - New Facilities	RY01	RY02
% of total quantities of lead and lead compounds reported as disposal or other releases by new facilities.	7.5 %	8.8 %
% of new facilities of the total # of facilities reporting for lead and lead compounds that reporting year.	78 %	80 %
Quantity of lead and lead compounds reported as disposal or other releases by new facilities..	34 million pounds	39.6 million pounds
% of the increase in lead and lead compounds reporting from RY00 that was due to the amounts reported by new facilities.	32 %	38 %

- For TRI reporting year 2001, 7.5% of all lead and lead compounds disposal or other release quantities were reported by new facilities (did not report lead or lead compounds in 2000, but may have reported prior to 2000); whereas in RY02, 8.8% of all disposal or other releases came from new facilities. Those facilities that reported for lead in 2002 that did not report lead in 2000 (but may have reported prior to 2000), accounted for 38% (39.6 million pounds) of the additional lead and lead compounds release quantities reported to TRI for RY02, relative to RY2000. Release quantities reported by new facilities in RY01 represented 32% of the increase in lead reported quantities from RY2000 to RY01, or approximately 34 million pounds. New facilities constitute a majority of lead and lead compounds reporters in 2001 and 2002, representing 78% of all lead and lead compounds reporters in RY01 and 80% of all lead and lead compounds reporters in RY02.
- *Is the 3.2% Increase in 2002 PDR due to information reported by new facilities?* EPA is unable to attribute this increase to one specific sector or facility. Based upon analysis of reporting trends, this increase is most likely due to the reporting of two metal mining facilities in RY02, although new lead facilities play a role in the increase in reporting of lead and lead compounds seen in RY02 by reporting 34 million new pounds of lead in 2001 and 39.6 million in 2002.

Lead and Lead Compounds Reporting since Lowered Threshold: Data Observations

EPA has gained unique information from facilities that reported lead and lead compounds quantities for the first time in RY01 and subsequently reported lead quantities in RY02. Some data observations include:

- *New facilities in 2001 and 2002 provided important information regarding where lead is managed across the U.S.* When compared to previous lead facilities (RY00) – new facilities are more likely to send lead and lead compounds quantities off-site, either for disposal or recycling (for RY02 new facilities combined off-site quantities were 49% of the total off-site quantities, compared to 27% for RY00 lead facilities). In RY02, new facilities accounted for 25% of off-site quantities sent for disposal, and 12% of off-site quantities for recycling. This variation may warrant different agency strategies to promote recycling among the diverse reporting universe. In addition, information on these sorts of facility and sector behaviors is invaluable to the public as they ascertain the use, management and movement of toxic chemicals in their local communities. EPA is considering highlighting the rate of facility recycling in upcoming publications to better draw attention to these encouraged practices.
- *Majority of new lead facilities reported disposal or other releases less than 1,000 pounds, providing EPA valuable information about smaller- quantity disposal or other releases in local communities.* Most new lead facilities in 2001 and 2002 reported disposal or other releases of lead greater than zero but less than or equal to 1,000 lbs (4,315 facilities in RY01 or 63% of new facilities in RY01, and 4,365 in RY02 or 65% of new lead facilities in RY02).
- *New lead facilities provide useful information about the quantities of lead managed, recycled across the U.S.* New facilities in 2001 and 2002 provided important information about the quantities of lead and lead compounds disposal or other releases and other waste management previously unreported to EPA. New facilities in RY01 reported over 63 million pounds of other waste management information (7.6 % of other waste management data for lead and lead compounds in RY01) and new facilities in 2002 reported over 61 million pounds of other waste management information (approx 7.8 % of all other waste management data for lead and lead compounds in RY02). Recycling was the most common management method used by new lead facilities in RY01 and RY02. This holds true for the majority of lead reporters overall, as well.
- *New lead facilities provide insight into possible recycling trends by sector.* In 2002, for example, new facilities reporting lead and lead compounds from the primary metals (SIC 33) and fabricated metals (SIC 34) sectors both recycled about 85% of their lead quantities, while other new facilities from the metal mining (SIC 10), electric utilities (SIC 491/493), and chemicals (SIC 28) sectors recycle very little. Agencies implementing pollution prevention programs may use this new information to develop strategies for increased recycling in certain sectors, or to highlight successes from certain industry sectors.

(Source: attachments newfac2001, newfac2002 and allfac2002b.)

EPA has also learned about new disposal or other releases and other waste management of lead and lead compounds in industry sectors that were not previously reporting lead and lead compounds quantities to EPA under the TRI program.

- *EPA received information for the first time on lead and lead compounds disposal or other releases and other waste management from petroleum bulk terminals (SIC 5171), food (SIC 20), tobacco (SIC 21) and apparel (SIC 23) industry sectors. TRI received reports for the first time in RY01 from 4 sectors and continued to receive similar information from these industry sectors in RY02. In total this amounted to over 100,000 lbs of new lead and lead compounds disposal and other releases information.*
 - SIC 5171 – Petroleum bulk terminals (6,490 lbs in RY01; 44,351 lbs in RY02)
 - SIC 20 – Food (53,018 lbs in RY01; 56,878 lbs in RY02)
 - SIC 21 – Tobacco (7,460 lbs in RY01; 6,368 lbs in RY02)
 - SIC 23 – Apparel (75 lbs in RY01; 50 lbs in RY02)

(Source: attachments newfac2001 and newfac2002)

- *Substantially new information on lead and lead compounds disposal or other releases and other waste management from printing (SIC 24), paper (SIC 26), lumber (SIC 27) and stone/clay/glass (SIC 32) sectors, among many others. Information from these industry sectors totaled more than 1 million pounds of new information on disposal or other releases in RY01 and at least another additional 1 million pounds of disposal or other releases quantities in RY02.*

SIC 27 – printing

- 94.9% of these facilities reporting lead and lead compounds for RY01 were new lead facilities:
 - 24,134 lbs of lead and lead compounds disposal or other releases reported in RY01;
- 94% of these facilities reporting for RY02 were new lead facilities (did not report in RY00, but did report in RY01):
 - 9,076 lbs of lead and lead compounds disposal or other releases reported in RY02.

SIC 26 – paper

- 99.6% of these facilities reporting lead and lead compounds for RY01 were new lead facilities:
 - 435,240 lbs of lead and lead compounds disposal or other releases reported in RY01;
- 99.6% of these facilities reporting for RY02 were new lead facilities (did not report in RY00, but did report in RY01):
 - 416,196 lbs of lead and lead compounds disposal or other releases reported in RY02.

SIC 24 – lumber

- 99.5% of these facilities reporting lead and lead compounds for RY01 were new lead facilities:
 - 88,168 lbs of lead and lead compounds disposal or other releases reported in RY01;
- 99.6% of these facilities reporting for RY02 were new lead facilities (did not report in RY00, but did report in RY01):
 - 88,339 lbs of lead and lead compounds disposal or other releases reported in RY02.

SIC 32 – stone/clay/glass

- 87.6% of these facilities reporting lead and lead compounds for RY01 were new lead facilities:
 - 573,343 lbs of lead and lead compounds disposal or other releases reported in RY01;
- 89.2 % of these facilities reporting for RY02 were new lead facilities (did not report in RY00, but did report in RY01):
 - 589,188 lbs of lead and lead compounds disposal or other releases reported in RY02.

(Source: attachments *allfac2000*, *allfac2001*, *allfac2002*, *newfac2001*, *newfac2001B*, *newfac2002* and *newfac2002B*.)

- *Decreasing trends of incorrect metals reporting (lead and lead compounds) as burned for energy recovery or treated by new lead facilities.* Some new lead facilities in RY01 and RY02 are not conforming to Agency reporting instructions and are therefore incorrectly reporting lead and lead compounds quantities as burned for energy recovery or treated. The metal has no heat value and thus cannot be combusted for energy recovery and cannot be destroyed (which is included in the TRI definition of treatment). Thus, transfers of metals and metal category compounds for further waste management should be reported as either a transfer for recycling or a transfer for disposal. For RY01 new facilities reported over 476,000 pounds erroneously as burned for energy recover or treated. For RY02, new facilities reported fewer of these similar erroneously amounts (almost 28,000 pounds). These lead and lead compounds reporting errors may impact zero release reporter estimates, among other reporting trends. EPA is examining this further and is paying special attention to fostering greater facility usage of the TRI- *Made Easy* software which prevents this error.

Supporting Data

All observations provided in this document were developed based on the following data tables. The public may obtain these data by visiting the EPA web site and downloading data from *Envirofacts* (www.epa.gov/enviro) or *TRI Explorer*(www.epa.gov/triexplorer). However, we have included these tables for readers' convenience the Appendix.

Data Tables referenced:

1.	allfac2000Bzero	8.	allfac2001
2.	allfac2001Bzero	9.	allfac2002
3.	allfac2002Bzero	10.	newfac2001
4.	allfac2000-ON	11.	newfac2002
5.	allfac2001-ON	12.	newfac2001B
6.	allfac2002-ON	13.	newfac2002B
7.	allfac2000	14.	Allfac2002B

Additional Data Tables for your information:

15.	newfac2002A
16.	newfac2002A-ON
17.	newfac2002AB